

IN THE CLAIMS

This listing of claims replaces all prior listings:

1. (Currently Amended) A signal processing device comprising:

a ~~first signal~~ commercial message section detecting means for detecting a ~~first signal~~ commercial message section from an input signal including at least the ~~first signal~~ commercial message section and the remaining signal section on a time division basis;

a ~~first signal~~ commercial message extracting means for extracting a ~~first signal~~ commercial message in the ~~first signal~~ commercial message section from the input signal in accordance with a result of the detection by the ~~first signal~~ commercial message section;

a recording means for recording each ~~signal~~ commercial message extracted from the input signal by the ~~first signal~~ commercial message extracting means;

an index information extracting means for extracting information from said ~~first signal~~ commercial message section to be used as a user-selectable index representing said recorded ~~first signal~~ commercial message, the information extracted from said ~~first signal~~ commercial message section and associated with said ~~first signal~~ commercial message being one of a starting image, a cut point image, a starting sound or an ending sound; and

a display means for displaying said index.

2. (Currently Amended) The signal processing device according to claim 1, further comprising a characteristic value extracting means for extracting a characteristic value characterizing the ~~first signal~~ commercial message from the detected ~~first signal~~ commercial message section, wherein said recording means records each characteristic value of the ~~first signal~~ commercial message in association with the ~~first signal~~ commercial message.

3. (Currently Amended) The signal processing device according to claim 1, wherein said ~~first signal~~ commercial message section detecting means detects said ~~first signal~~ commercial message section from said input signal on the basis of a characteristic pattern of the ~~first signal~~ commercial message appearing in said input signal at predetermined time intervals and a characteristic value reflecting the probability of the ~~first signal~~ commercial message appearing in the input signal.

4. (Currently Amended) The signal processing device according to claim 1, wherein said ~~first signal~~ commercial message section detecting means detects said ~~first signal~~ commercial message section on the basis of predetermined guide information which is prepared corresponding to said input signal.

5. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is amplitude of the signal in the ~~first signal~~ commercial message section.

6. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a spectrum of the signal in the ~~first signal~~ commercial message section.

7. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a linear prediction coefficient of the signal in the ~~first signal~~ commercial message section.

8. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a histogram of a predetermined component of the signal in the ~~first signal~~ commercial message section.

9. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is mean value of a predetermined component of the signal in the ~~first signal~~ commercial message section.

10. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a difference between two predetermined signal components of the ~~first signal~~ commercial message in the ~~first signal~~ commercial message section.

11. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is the number of changes of the state of the signal in the ~~first signal~~ commercial message section.

12. (Currently Amended) The signal processing device according to claim 2, wherein said characteristic value characterizing said ~~first signal~~ commercial message is the time of the change of the state of the signal in the ~~first signal~~ commercial message section.

13. (Canceled)

14. (Currently Amended) The signal processing device according to claim 1, wherein said index is an edited signal obtained by editing said ~~first signal~~ commercial message.

15. (Currently Amended) The signal processing device according to claim 14, wherein said edited signal obtained by editing said ~~first signal~~ commercial message comprises a set of signals at the time when the state of said ~~first signal~~ commercial message changes.

16. (Currently Amended) The signal processing device according to claim 14, wherein said edited signal obtained by editing said ~~first signal~~ commercial message comprises a signal

representing one of a starting part of said ~~first signal~~ commercial message and an ending part of said ~~first signal~~ commercial message.

17. (Currently Amended) The signal processing device according to claim 1, wherein said index information extracting means extracts for the index a portion of the ~~first signal~~ commercial message at a time when the state of said ~~first signal~~ commercial message changes.

18. (Currently Amended) The signal processing device according to claim 2, further comprising a comparing means for comparing the characteristic values respectively characterizing two ~~first signals~~ commercial messages recorded by said recording means and discarding one of the recorded two ~~first signal~~ commercial messages when the characteristic values of the two ~~first signals~~ commercial messages are determined to be substantially the same.

19. (Currently Amended) The signal processing device according to claim 18, wherein said comparing means detects agreement/disagreement of the two ~~first signals~~ commercial messages in a part of the ~~first signal~~ commercial message section or in the entire ~~first signal~~ commercial message section by comparing said characteristic values.

20. (Currently Amended) The signal processing device according to claim 18, wherein said comparing means detects the degree of similarity of the two ~~first signals~~ commercial messages in a part of the ~~first signal~~ commercial message section or in the entire ~~first signal~~ commercial message section by comparing said characteristic values.

21. (Currently Amended) The signal processing device according to claim 18, wherein said comparing means performs the comparing operation on a basis of a distance as determined by using a predetermined distance scale between vectors corresponding to the two ~~first signals~~ commercial messages, the respective vector of each of the two ~~first signals~~ commercial

messages formed from at least one of the amplitude of the signal in the ~~first signal~~ commercial message section, the spectrum of the signal in the ~~first signal~~ commercial message section, the linear prediction coefficient of the signal in the ~~first signal~~ commercial message section, the histogram of a predetermined component of the signal in the ~~first signal~~ commercial message section, the mean value of the predetermined component of the signal in the ~~first signal~~ commercial message section, a difference between two predetermined signal components of the signal in the ~~first signal~~ commercial message section, the number of changes in the state of the signal in the ~~first signal~~ commercial message section and the time of a change in the state of the signal in the ~~first signal~~ commercial message section.

22. (Currently Amended) The signal processing device according to claim 13, wherein said user-selectable index is one of a plurality of user-selectable indices each of which correspond to an extracted signal from said input signal, said display means displays each of said indices, and further comprising:

an index information selecting means for selecting one index from said displayed plurality of indices; and

a retrieving means for retrieving one of the recorded extracted signals corresponding to said selected one index.

23. (Currently Amended) The signal processing device according to claim 2, further comprising:

a retrieving means for retrieving one of the recorded extracted signals substantially agreeing with said ~~first signal~~ commercial message from said recording means, using said ~~first~~

~~signal~~ commercial message in a part of the section or in the entire section or a characteristic value characterizing the ~~first signal~~ commercial message as a retrieving condition.

24. (Currently Amended) The signal processing device according to claim 2, further comprising:

a retrieving means for retrieving one of the recorded extracted signals substantially agreeing with said ~~first signal~~ commercial message from said recording means, using a part or all of said ~~first signal~~ commercial message or a characteristic value characterizing the ~~first signal~~ commercial message as retrieving condition.

25. (Currently Amended) The signal processing device according to claim 1, further comprising:

a measuring means for measuring the number of times and/or the hours of appearances of a same ~~first signal~~ commercial message.

26. (Currently Amended) The signal processing device according to claim 1, further comprising:

a measuring means for measuring the number of times and/or the hours of appearances of similar ~~first signals~~ commercial messages.

27. (Currently Amended) A signal processing method comprising the steps of:

detecting a ~~first signal~~ commercial message section from an input signal containing at least the ~~first signal~~ commercial message section and the remaining signal section on a time division basis;

extracting a ~~first signal~~ commercial message of the ~~first signal~~ commercial message section out of the input signal in accordance with ~~to~~ the result of the detection of the ~~first signal~~ commercial message section;

recording each ~~signal~~ commercial message extracted from the input signal by the ~~first signal~~ commercial message extracting means;

extracting information from said ~~first signal~~ commercial message section to be used as a user-selectable index representing said recorded ~~first signal~~ commercial message, the information extracted from said ~~first signal~~ commercial message section and associated with said ~~first signal~~ commercial message being one of a starting image, a cut point image, a starting sound or an ending sound; and

displaying said index.

28. (Currently Amended) The signal processing method according to claim 27, further comprising the steps of:

extracting a characteristic values characterizing the ~~first signal~~ commercial message from the detected ~~first signal~~ commercial message section; and

each characteristic values of the ~~first signal~~ commercial message in association with the ~~first signal~~ commercial message.

29. (Currently Amended) The signal processing method according to claim 27, wherein said ~~first signal~~ commercial message section detecting step is adapted to detect said ~~first signal~~ commercial message section from said input signal on the basis of a characteristic pattern of the ~~first signal~~ commercial message appearing in said input signal at predetermined time intervals

and a characteristic value reflecting the probability of the ~~first signal~~ commercial message appearing in the input signal.

30. (Currently Amended) The signal processing method according to claim 27, wherein said ~~first signal~~ commercial message section detecting step comprises detecting said ~~first signal~~ commercial message section on a basis of predetermined guide information which is prepared to correspond to said input signal.

31. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is amplitude of the signal in the ~~first signal~~ commercial message section.

32. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a spectrum of the signal in the ~~first signal~~ commercial message section.

33. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a linear prediction coefficient of the signal in the ~~first signal~~ commercial message section.

34. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a histogram of a predetermined component of the signal in the ~~first signal~~ commercial message section.

35. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a mean value of a predetermined component of the signal in the ~~first signal~~ commercial message section.

36. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is a difference between two predetermined signal components of the ~~first signal~~ commercial message in the ~~first signal~~ commercial message section.

37. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is the number of changes of the state of the signal in the ~~first signal~~ commercial message section.

38. (Currently Amended) The signal processing method according to claim 28, wherein said characteristic value characterizing said ~~first signal~~ commercial message is the time of the change of the state of the signal in the ~~first signal~~ commercial message section.

39. (Canceled)

40. (Currently Amended) The signal processing method according to claim 27, wherein said index is an edited signal obtained by editing said ~~first signal~~ commercial message.

41. (Currently Amended) The signal processing method according to claim 40, wherein said edited signal obtained by editing said ~~first signal~~ commercial message comprises a set of signals at the time when the state of said ~~first signal~~ commercial message changes.

42. (Currently Amended) The signal processing method according to claim 40, wherein said edited signal obtained by editing said ~~first signal~~ commercial message comprises a signal representing one of a starting part of said ~~first signal~~ commercial message and an ending part of said ~~first signal~~ commercial message.

43. (Currently Amended) The signal processing method according to claim 27, wherein said index information extracting step comprises extracting as the index a portion of the ~~first~~

signal commercial message at a time when the state of said first signal commercial message changes.

44. (Currently Amended) The signal processing method according to claim 28, further comprising comparing the characteristic values respectively characterizing two first signals commercial messages recorded by said recording means and discarding one of the recorded two first signals commercial messages when the characteristic values of the two first signals commercial messages are determined to be substantially the same.

45. (Currently Amended) The signal processing method according to claim 44, wherein said comparing step is adapted to detect the agreement/disagreement of the two first signals commercial messages in a part of the first signal commercial message section or in the entire first signal commercial message section by comparing said characteristic values.

46. (Currently Amended) The signal processing method according to claim 44, wherein said comparing step is adapted to detect the degree of similarity of the two first signals commercial messages in a part of the first signal commercial message section or in the entire first signal commercial message section by comparing said characteristic values.

47. (Currently Amended) The signal processing method according to claim 44, wherein said comparing step comprises comparing the characteristic values respectively characterizing the two first signals commercial messages on the basis of the distance as determined by using a predetermined distance scale between vectors corresponding to the two first signals commercial messages, the respective vector of each of the two first signals commercial messages formed from at least one of the amplitude of the signal in the first signal commercial message section, the spectrum of the signal in the first signal commercial message section, the linear prediction

coefficient of the signal in the ~~first signal~~ commercial message section, the histogram of a predetermined component of the signal in the ~~first signal~~ commercial message section, the average value of a predetermined component of the signal in the ~~first signal~~ commercial message section, a difference between two predetermined signal components of the signal in the ~~first signal~~ commercial message section, the number of changes in the state of the signal in the ~~first signal~~ commercial message section and the time of a change in the state of the signal in the ~~first signal~~ commercial message section.

48. (Currently Amended) The signal processing method according to claim 39, wherein said user-selectable index is one of a plurality of user-selectable indices each of which correspond to an extracted signal from said input signal, said display means displays each of said indices, and further comprising selecting one index from said displayed plurality indices; and retrieving one of the recorded extracted signals corresponding to said selected one index.

49. (Currently Amended) The signal processing method according to claim 28, further comprising a retrieving step for retrieving one of the recorded extracted signals substantially agreeing with said ~~first signal~~ commercial message from said recording step, using said ~~first signal~~ commercial message in a part of the section or in the entire section or a characteristic value characterizing the ~~first signal~~ commercial message as a retrieving condition.

50. (Currently Amended) The signal processing method according to claim 28, further comprising a retrieving step for retrieving one of the recorded extracted signals substantially agreeing with said ~~first signal~~ commercial message from said recording step, using a part or all of said ~~first signal~~ commercial message or a characteristic value characterizing the ~~first signal~~ commercial message as a retrieving condition.

51. (Currently Amended) The signal processing method according to claim 27, further comprising a measuring step for measuring the number of times and/or the hours of appearances of a same ~~first signal~~ commercial message.

52. (Currently Amended) The signal processing method according to claim 27, further comprising a measuring step for measuring the number of times and/or the hours of appearances of similar ~~first signal~~ commercial message s.

53. (Currently Amended) The signal processing device according to claim 1, wherein said input signal comprises a video signal and/or an audio signal and said ~~first signal~~ commercial message covers a commercial message section.

54. (Currently Amended) The signal processing method according to claim 27, wherein said input signal comprises a video signal and/or an audio signal and said ~~first signal~~ commercial message covers a commercial message section.

55. (New) A signal processing device comprising:
a first signal section detecting means for detecting a first signal section from an input signal including at least the first signal section and the remaining signal section on a time division basis;

a first signal extracting means for extracting a first signal in the first signal section from the input signal in accordance with a result of the detection by the first signal section;

a recording means for recording each signal extracted from the input signal by the first signal extracting means, wherein said recording means includes a characteristic comparing means for comparing the first signal with each signal stored in the recording means and, in

response to determining that the first signal is the same as another signal stored in the recording means, removing from the recording means one of the first signal or the other signal;

an index information extracting means for extracting information from said first signal section to be used as a user-selectable index representing said recorded first signal; and

a display means for displaying said index.